PENTAIR Intellichem Controller Firmware Upgrade Kit Installation Guide

PENTAIR

**INTELLICHEM® CONTROLLER
FIRMWARE UPGRADE KIT
INSTALLATION GUIDE**

**IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS**

Kit contents
The following items are included in the Kit P/N 521498

- Programmer IntelliChem® Controller – P/N 521469

- Installation Guide (this manual)

System requirements

- Windows® 10, 8 or 7

Technical Support (US)
8 AM to 7.30 PM (US Eastern and Pacific Time)
Phone: (800) 831-7133

Related manuals
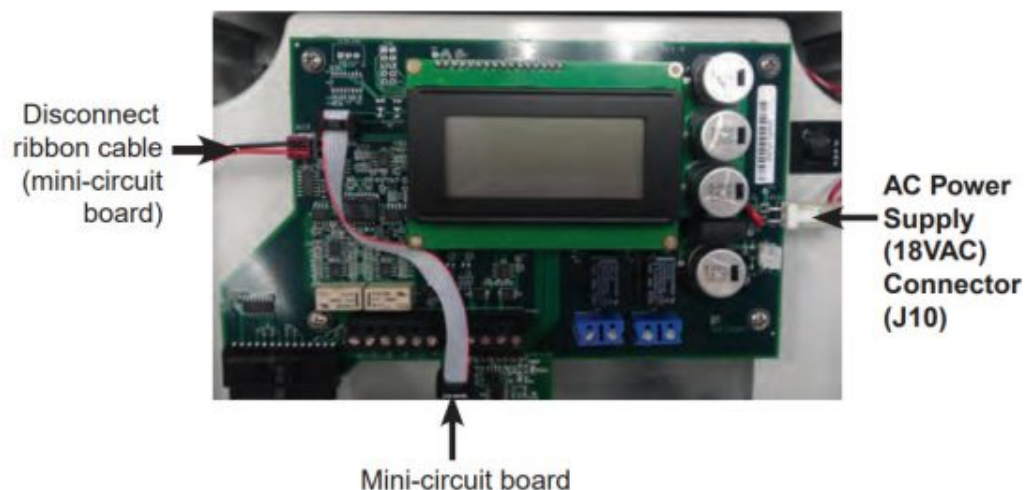IntelliChem Controller Installation and User's Guide (P/N 521363)

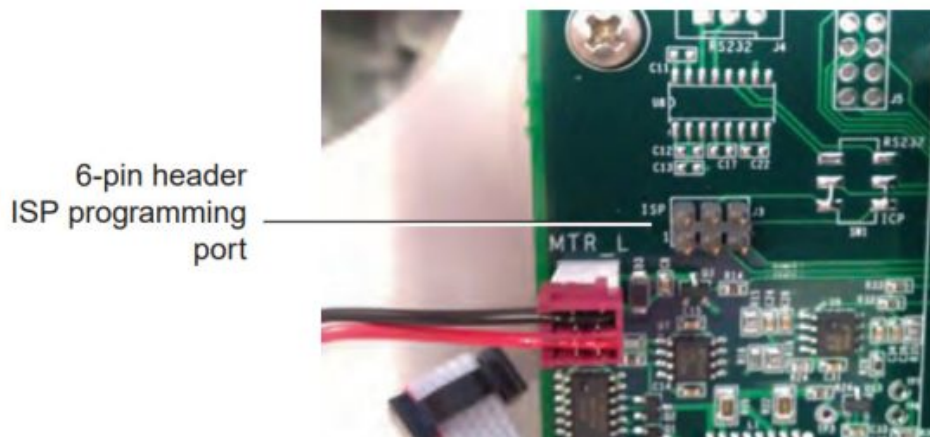## IntelliChem® Controller Firmware Update Instructions

The IntelliChem Controller firmware updates are performed using the update programmer connected to a USB port on a computer running Microsoft ® Windows version 10, 8, or 7.

Connect Programmer Cables

1. Disconnect power to the IntelliChem Controller. Open the front cover and disconnect the 18 VAC supply connector J10 on the right side of the IntelliChem Controller circuit board (as shown below).
2. **Note: If there is a mini-circuit board connected to the IntelliChem Controller circuit board, disconnect the ribbon cable from the IntelliChem Controller circuit board.**

3. Locate the 6-pin header labeled ISP in the upper-left corner of the theIntelliChem Controller circuit board (as shown below).

4. Connect the 6-pin ribbon cable connector to the ISP (on the System Programming) port with the RED stripe toward the left side as shown below.

5. Reconnect the power connector (J10) to the IntelliChem® Controller circuit board (see page 1).
6. **DO NOT connect the micro USB cable to the computer.**

Installing IntelliChem Controller Firmware Upgrade Setup Wizard

1. Download the Pentair software from: **https://www.pentaircom/en/products/pookspa-equipment/pool-automation/intellichem_waterchemistrycontroller.html**
2. Navigate to **HOMEOWNER AND PRO RESOURCES -> SOFTWARE**
3. Download and unzip file: **IntelliChem Firmware Upgrade v1-080.zip**
4. **If** it exists on your computer, Delete the directory CAPentairlIntelliCheml.
5. From folder ICHEM 1060, Unzip file: **IntelliChem_Firmware_Upgrade_v1- 060.zip**
6. Install the firmware upgrade setup wizard by double-clicking on the file you just unzipped **IntelliChem_Firmware_Upgrade_v1-060.exe.**
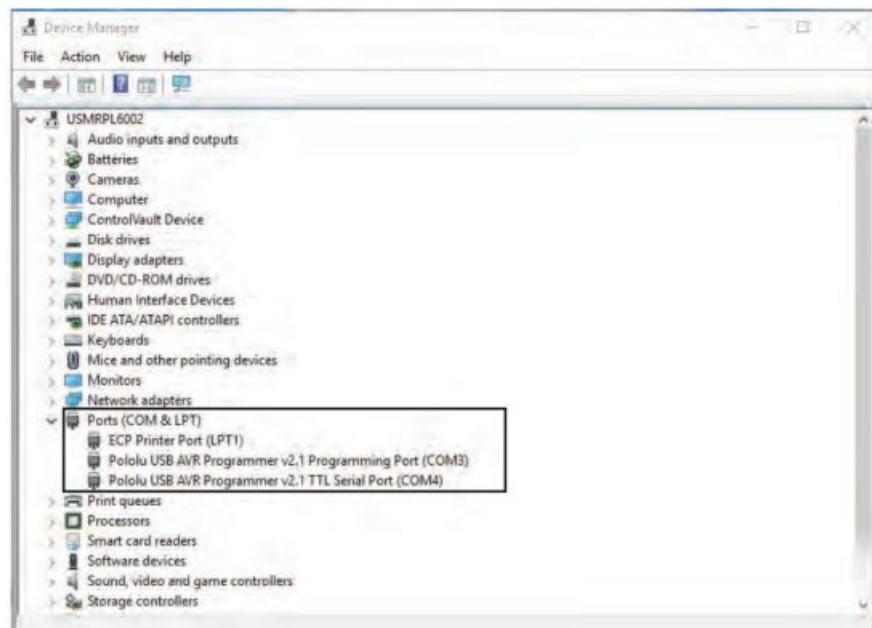   Follow the screen message to complete the installation.
   Note: For Windows 10, the INF configuration file is not compatible with this method of installation. Ignore all error messages. Select "OK" or "CLOSE" to continue and complete the installation. The Avrdude Programming utility and Pololu driver will be installed.
7. Follow the screen message to complete the installation.
8. Upon completion of software installation, copy the following two files to folder **C:IpentairlIntelliChernlICHEM_Script_1080.bat and ICHEM_v1.080.a90**
9. Next, generate a NEW iChem icon pointing to IntelliChem version v1.080. Right-click on the file **bat,** select **Send to,** then select **Desktop (create shortcut).**
   Programming IntelliChem Controller Firmware

10. Apply power to the IntelliChem Controller unit and connect the Pololu ribbon cable to the IntelliChem Controller ISP programming **port ISP J3.**

11. Connect a micro USB cable from the Pololu programmer board to the computer USB port.

12. To verify if the Polulu device driver is installed correctly, Windows Device Manager should display as shown below.

13. **For Windows 7, 8 users:** Double-click on the desktop icon "IChem_ Script_1080" to begin programming IntelliChem® Controller firmware version 1.080. Wait for programming to complete.

14. **For Windows 10 users:**
    • Double-click on the desktop icon IChem_Script_1080
    • Enter the Pololu USB Programming COM port number ONLY from the Device Manager (i.e… 3)

```
C:\WINDOWS\system32\cmd.exe

*******************************************************************
**   PENTAIR                                                     **
**   INTELLICHEM CHEMICAL CONTROLLER FIRMWARE UPDATE v1.080      **
*******************************************************************
**IMPORTANT NOTES!                                              **
**   1. Please install the USB programmer driver before updating **
**      the IntelliChem chemical controller firmware            **
**   2. Support Windows 7, 8, 10                                **
*******************************************************************
Press any key to continue . . .
"WINDOWS 10"
What com port is your USB programmer connected to?
Please enter a number 1-75
COM3

avrdude: AVR device initialized and ready to accept instructions

Reading | ################################################## | 100% 0.02s

avrdude: Device signature = 0x1e9702
avrdude: current erase-rewrite cycle count is -50462977 (if being tracked)
avrdude: erasing chip
avrdude: reading input file "ICHEM_v1.080.a90"
avrdude: input file ICHEM_v1.080.a90 auto detected as Intel Hex
avrdude: writing flash (89500 bytes):

Writing | ###############                                   | 29% 21.37s
```

Troubleshooting

If the programmer exits without showing a progress bar, there was an error in the setup or installation. Check the following:
a) The programmer is installed correctly
b) IntelliChem® Controller unit is powered on
c) Driver is properly installed


```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Press any key to continue . . .
avrdude: ser_open(): can't open device "\\.\USBSER000": The system cannot find t
he file specified.

Press any key to continue . . . _
```

No communication with Pololu Programmer, check the USB connection.


```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Press any key to continue . . .

avrdude: stk500v2_command(): command failed
avrdude: stk500v2_command(): unknown status 0xc9
avrdude: stk500v2_program_enable(): cannot get connection status
avrdude: initialization failed, rc=-1
        Double check connections and try again, or use -F to override
        this check.
```

No communication with IntelliChem Controller, check the connection to ISP on the IntelliChem Controller board.

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Documents / Resources

PENTAIR Intellichem Controller Firmware Upgrade Kit [pdf] Installation Guide
Intellichem Controller Firmware Upgrade Kit

References

- ❖ **Pentair**